

inlet port 55. The first inlet port 55 is generally positioned in a central portion of the pressure valve 52. A second inlet port 56 is located generally adjacent to the second end 54 of the pressure valve 52. An exit port 57 is in the second end 54 of the pressure valve 52. A stopper 58 is slidably movable within the pressure valve 52. The stopper 58 comprises a seal between the first 55 and second 56 inlet ports. The stopper 58 has a biasing means 59 thereon for biasing the stopper 58 toward the second inlet port 56. The biasing means 59 is a spring. The spring is coupled to a rod 60. The rod 60 is rotatably inserted in the first end 53 of the pressure valve 52 and is threaded so the rod 60 may be moved up and down with respect to the first end 53 of the pressure valve 52 and thus controlling flow of fluid through the second inlet port 56. Also, fluid entering through the first inlet port 55 under high pressure will push the stopper 58 down to lower the amount of fluid which may enter through the second inlet port 56.

A first pipe 62 has a first 63 and second end 64. The first end 63 is fluidly coupled to the first inlet port 55. The second end 64 is fluidly coupled to the processed gray-water outlet 40. The second end 64 is positioned between the first valve 24 and the first one-way valve 41.

A second pipe 66 has a first 67 and second end 68 end. The first end 67 is fluidly coupled to the fresh water inlet 32. The second end 68 is fluidly coupled to the second inlet port 56.

A third pipe 70 has a first end 71 and a second end 72. The first end 71 is fluidly coupled to the exit port 57, and the second end 72 is fluidly coupled to the processed gray-water outlet. The first one-way valve 41 is between the first 62 and third 70 pipes. The third pipe 70 has a second one-way valve 73 such that fluid traveling through the third pipe 70 travels in a direction from the first end 71 toward the second end 72 of the third pipe 70 and cannot enter the pressure valve 52 from the processed gray-water outlet 40.

The pressure valve 52 may be selectively adjusted to increase or decrease the water pressure in the processed gray-water outlet 40. It may also be used to increase the flow from the fresh water outlet 32 if the flow from the reservoir 12 is too low and the solenoid fails 34 so that the second plug 30 does not open to increase the fresh water flow.

The gray-water may be obtained from sources such as showers, sinks, washing machines and dish washers. The processed gray-water is generally intended to be used to supplement water used for toilets and lawn and garden care. Dedicated lines 76 may be run into the system 12 from wells, dams, rivers or other sources of gray-water to be treated by the system 12.

As to a further discussion of the manner of usage and operation of the present invention, the same should be apparent from the above description. Accordingly, no further discussion relating to the manner of usage and operation will be provided.

With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and

accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

We claim:

1. A gray-water reclamation and reuse system, said system comprising:

a reservoir, said reservoir being adapted to treat gray-water, said reservoir having an intake pipe, an outlet pipe and an overflow pipe;

an inlet for supplying gray-water to said reservoir, said inlet being fluidly coupled to said intake pipe;

a filtering means for filtering said gray-water, said filtering means being fluidly coupled to said outlet pipe, said gray-water being filtered through said filter such that said filtered water is defined as processed gray-water;

a pumping means for drawing said gray-water through said filtering means, said pumping means being fluidly coupled to said filtering means by a pipe; and

a first valve for controlling flow of said processed gray-water from said pumping means, said first valve having a first end, a second end and middle section, said first end being fluidly coupled to said pumping means by a pipe, said second end being fluidly coupled to a fresh water inlet, a middle section of said first valve being fluidly coupled to a processed gray-water outlet, said first valve having a first and second plug therein, said first plug being positioned between said first end and said middle section, said second plug being positioned between said second end and said middle section, said first valve having a water pressure sensing means therein for detecting a loss of water pressure, said water pressure sensing means being generally adjacent to said first end of said valve, said first valve having an actuating means therein for moving said second plug between an open and a closed position, said actuating means being a solenoid, said solenoid being operationally coupled to said water pressure sensing means, wherein if the pressure of said processed gray-water falls said solenoid will open said second plug such that water from said fresh water inlet may enter said processed gray-water outlet.

2. The gray-water reclamation and reuse system as in claim 1, wherein said processed gray-water outlet has a first one-way valve therein for allowing flow of water in a first direction away from said first valve.

3. The gray-water reclamation and reuse system as in claim 2, further comprising:

a pressure stabilizing means for stabilizing the pressure of the processed gray-water leaving said processed gray-water outlet, said stabilizing means comprising:

a pressure valve, said pressure valve fluidly coupling said fresh water inlet and said processed gray-water outlet, said pressure valve being adapted to manually control the flow of water from said fresh water inlet into said processed gray-water outlet.

4. The gray-water reclamation and reuse system as in claim 3, wherein said pressure stabilizing means further comprises:

said pressure valve being elongate and having a first end and a second end, said pressure valve having a first inlet port, said first inlet port being generally positioned in a central portion of said pressure valve, a second inlet port being located generally adjacent to said second end of said pressure valve, an exit port being in said second end of said pressure valve, a stopper being slidably movable within said pressure valve, said stopper comprising a seal between said first and second inlet ports,

said stopper having a biasing means thereon for biasing said stopper toward said second inlet port, said biasing means being a spring, said spring being coupled to a rod, said rod being rotatably inserted in said first end of said pressure valve, said rod being threaded; 5  
 a first pipe, said first pipe having a first and second end, said first pipe first end being fluidly coupled to said first inlet port, said first pipe second end being fluidly coupled to said processed gray-water outlet, said first pipe second end being positioned between said first 10 valve and said first one-way valve;

a second pipe, said second pipe having a first and second end, said second pipe first pipe first end being fluidly coupled to said fresh water inlet, said second pipe first 15 pipe second end being fluidly coupled to said second inlet port; and

a third pipe, said third pipe having a first end and a second end, said third pipe first end being fluidly coupled to said exit port, said third pipe second end being fluidly 20 coupled to said processed gray-water outlet, said first one-way valve being between said first and third pipes, said third pipe having a second one-way valve such that fluid traveling through said third pipe travels in a direction from said third pipe first end toward said third 25 pipe second end.

5. The gray-water reclamation and reuse system as in claim 1, further comprising:

a pressure stabilizing means for stabilizing the pressure of the processed gray-water leaving said processed gray- 30 water outlet, said stabilizing means comprising:

a pressure valve, said pressure valve fluidly coupling said fresh water inlet and said processed gray-water outlet, said pressure valve being adapted to manually control the flow of water from said fresh water inlet 35 into said processed gray-water outlet.

6. A gray-water reclamation and reuse system, said system comprising:

a reservoir, said reservoir being adapted to treat gray-water, said reservoir having a top side and a bottom side, said reservoir having an intake pipe, an outlet pipe 40 and an overflow pipe, said outlet pipe being positioned generally adjacent to said bottom side of said reservoir, said overflow pipe being positioned generally adjacent to said top side of said reservoir;

an inlet for supplying gray-water to said reservoir, said inlet being fluidly coupled to said intake pipe;

a filtering means for filtering said gray-water, said filtering means being fluidly coupled to said outlet pipe, said gray-water being filtered through said filter such that 50 said filtered water is defined as processed gray-water;

a pumping means for drawing said gray-water through said filtering means, said pumping means being fluidly coupled to said filtering means by a pipe, wherein said pumping means causes said gray-water to be drawn out 55 of said reservoir and through said filter;

a first valve for controlling flow of said processed gray-water from said pumping means, said first valve having a first end, a second end and middle section, said first valve having a first and second plug therein, said first 60 plug being positioned between said first end and said middle section, said second plug being positioned between said second end and said middle section, said first end being fluidly coupled to said pumping means by a pipe, said second end being fluidly coupled to a 65 fresh water inlet, a middle section of said first valve being fluidly coupled to a processed gray-water outlet,

wherein fluid entering said first valve exits through said processed gray-water outlet, said first valve having a water pressure sensing means therein for detecting a loss of water pressure, said water pressure sensing means being generally adjacent to said first end of said valve, said first valve having an actuating means therein for moving said second plug between an open and a closed position, said actuating means being a solenoid, said solenoid being operationally coupled to said water pressure sensing means, wherein if the pressure of said processed gray-water falls said solenoid will open said second plug such that water from said fresh water inlet may enter said processed gray-water outlet, said processed gray-water outlet having a first one-way valve therein for allowing flow of water in a first direction away from said first valve, said processed gray-water outlet adapted to supply water to a toilet and a lawn watering system;

a pressure stabilizing means for stabilizing the pressure of the processed gray-water leaving said processed gray-water outlet, said stabilizing means comprising:

a pressure valve, said pressure valve being elongate and having a first end and a second end, said pressure valve having a first inlet port, said first inlet port being generally positioned in a central portion of said pressure valve, a second inlet port being located generally adjacent to said second end of said pressure valve, an exit port being in said second end of said pressure valve, a stopper being slidably movable within said pressure valve, said stopper comprising a seal between said first and second inlet ports, said stopper having a biasing means thereon for biasing said stopper toward said second inlet port, said biasing means being a spring, said spring being coupled to a rod, said rod being rotatably inserted in said first end of said pressure valve, said rod being threaded;

a first pipe, said first pipe having a first and second end, said first pipe first end being fluidly coupled to said first inlet port, said first pipe second end being fluidly coupled to said processed gray-water outlet, said first pipe second end being positioned between said first valve and said first one-way valve;

a second pipe, said second pipe having a first and second end, said second pipe first end being fluidly coupled to said fresh water inlet, said second pipe second end being fluidly coupled to said second inlet port;

a third pipe, said third pipe having a first end and a second end, said third pipe first end being fluidly coupled to said exit port, said third pipe, second end being fluidly coupled to said processed gray-water outlet, said first one-way valve being between said first and third pipes, said third pipe having a second one-way valve such that fluid traveling through said third pipe travels in a direction from said third pipe, first end toward said third pipe second end; and wherein said pressure valve may be selectively adjusted to increase or decrease the water pressure of said processed gray-water outlet.

7. A gray-water reclamation and reuse system, said system comprising:

a reservoir adapted to treat gray-water having an intake pipe, an outlet pipe and an overflow pipe;

an inlet for supplying gray-water to said reservoir being fluidly coupled to said intake pipe;

a filtering means for filtering said gray-water being fluidly coupled to said outlet pipe, said gray-water being

filtered through said filter such that said filtered water is defined as processed gray-water;

a pumping means for drawing said gray-water through said filtering means, said pumping means being fluidly coupled to said filtering means by a pipe;

a first valve for controlling flow of said processed gray water from said pumping means, said first valve being fluidly coupled to said pumping means, a fresh water inlet, and to a processed gray water outlet, said first valve having a water pressure sensing means therein for detecting a loss of water pressure, said first valve having a solenoid therein operationally coupled to said water pressure sensing means, a plug being positioned in said first valve for opening and closing said fresh water inlet, wherein if the pressure of said processed gray water falls said solenoid will open said plug such that water from said fresh water inlet may enter said processed gray water outlet; and

a pressure stabilizing means having a first inlet port, a second inlet port and an exit port, said first inlet port and said exit port being coupled to said processed gray water outlet downstream of said first valve and said second inlet port being coupled to said fresh water inlet upstream of said first valve, wherein said pressure stabilizing means is adapted to allow fresh water to flow from said fresh water inlet to said processed gray water outlet in the event said solenoid fails to open said plug.

8. The gray-water reclamation and reuse system as in claim 7, wherein said processed gray-water outlet has a first one-way valve therein for allowing flow of water in a first direction away from said first valve.

9. The gray-water reclamation and reuse system as in claim 8, wherein said pressure stabilizing means stabilizes the pressure of the processed gray-water leaving said processed gray-water outlet and further comprises a pressure valve that includes said first and second inlet ports and said exit valve and is adapted to manually control the flow of water from said fresh water inlet into said processed gray-water outlet.

10. The gray-water reclamation and reuse system as in claim 9, wherein said pressure valve is elongate and further comprises:

- a first end and a second end, said first inlet port being generally positioned in a central portion of said pressure valve, said second inlet port being located generally adjacent to said second end of said pressure valve, said exit port being in said second end of said pressure valve, a stopper being slidably movable within said pressure valve, said stopper comprising a seal between said first and second inlet ports, said stopper having a biasing means thereon for biasing said stopper toward said second inlet port, said biasing means being a spring, said spring being coupled to a rod, said rod being rotatably inserted in said first end of said pressure valve, said rod being threaded;
- a first pipe having a first end being fluidly coupled to said first inlet port and a second end being fluidly coupled to said processed gray-water outlet, said first pipe second end being positioned between said first valve and said first one-way valve;
- a second pipe having a first end being fluidly coupled to said fresh water inlet and a second end being fluidly coupled to said second inlet port; and
- a third pipe having a first end being fluidly coupled to said exit port and a second end being fluidly coupled to said processed gray-water outlet, said first one-way valve being between said first and third pipes, said third pipe having a second one-way valve such that fluid traveling through said third pipe travels in a first direction from said third pipe first end toward said third pipe second end.

11. The gray-water reclamation and reuse system as in claim 7, wherein said pressure stabilizing means stabilizes the pressure of the processed gray-water outlet and further comprises a pressure valve that includes said first and second inlet ports and said exit valve and is adapted to manually control the flow of water from said fresh water inlet into said processed gray-water outlet.

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